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## EDITORIAL COMMENT



### THE PRICE OF IGNORANCE

THE summer which has just closed seems to have shown an increase in all of those forms of illness which are commonly called filth diseases, which come from a lack of proper sanitary precautions where people are crowded together during the heated term.

If one is to judge from the prevailing newspaper reports, the epidemic of yellow fever in New Orleans has been most alarming; yellow fever and bubonic plague have been reported as threatening in the Panama Zone, while Russia and Germany have suffered from an unusual outbreak of cholera, and typhoid, meningitis, and all the more common forms of contagious diseases have been prevalent in many parts of our own country.

It seems strange that with the cause and prevention of such diseases so well understood by the two great professions of medicine and nursing that the public at large should remain in such total ignorance in these matters. It is perhaps hardly to be wondered at that the illiterate and dull among the masses remain in an unenlightened state, but that intelligent people, such as city officials are supposed to be, should permit conditions to exist which are conducive to these epidemics remains an ever-increasing mystery.

From an economic standpoint the cost of prevention, leaving out the entire question of suffering and death, would be infinitely less to the local government than the expense which must be entailed in suppressing and controlling any one of these epidemics.

We are of the opinion that the two professions of medicine and nursing are in a measure responsible for the ignorance of the people at large in regard to these questions, that knowledge through schools and

the public press should be more widely disseminated by them, and that no individual of either of these professions is exempt from obligations along these lines.

Every question concerning the public health, no matter how small the town or how large the city, is one in which the local doctor and the local nurse should be interested and active, and neither is carrying out the obligations of his or her separate profession, which calls for service which is first and always for the benefit of others, who remains passive and consents to reap the financial benefit of such public ignorance without having made every effort possible for the enlightenment of the people of the community in which they live.

Such preventive measures as are practised and such knowledge as has been disseminated has come, in every part of the world, from that small group of medical men who have always been true philanthropists and educators, the rank and file in the medical profession remaining passive, while the great nursing body, with the exception of a few individual exceptions, seem to be serenely unconscious of any obligation; but as specialists and co-workers with the medical profession we have no right to shirk these responsibilities longer.

This line of work is legitimately within the province of every nursing organization, and these organizations should make themselves felt in such matters as clean streets, sufficient water supply, proper flushing of sewers, cleanliness of public conveyances, school nursing, etc. If nurses are going to claim the right to call themselves members of a profession, they must begin to assume the responsibilities that such a profession entails.

We need a tremendous awakening all along these lines in regard to our responsibilities in the question of public health.

We are indebted to Miss Florence F. Quaife, of the Truro Infirmary, New Orleans, for the article published in this issue on yellow fever. As the introductory note explains, this paper was written by Dr. Rudolph Matas, was submitted to the medical society of New Orleans for its endorsement, and was ordered published and circulated for the benefit of nurses, physicians, and others who were engaged in the work of caring for yellow-fever patients.

This information is absolutely authentic, and nurses everywhere should familiarize themselves with the simple, practical facts which it contains.

Miss Quaife promises to send to the JOURNAL further information in regard to the epidemic of yellow fever in New Orleans and the nursing of these cases, and our pages are open to nurses everywhere who have had the actual practical experience of these summer epidemics.

In these days of rapid transportation, with hundreds of people every day moving from one section of the country to the other, no nurse can be sure that she will not be called upon at any hour to nurse one of those diseases which are considered peculiar to the tropical regions, and to those who are already enrolled on the Army Reserve List such knowledge is absolutely necessary. Imagine the humiliation of a nurse from the North who, being ordered into the yellow-fever district, finds herself totally ignorant of the simple precautions necessary for the prevention of the spread of the disease.

#### THE VOLUNTEER ELIGIBLE LIST.

Speaking of the Army Reserve List takes us again to the subject of the enrolment which is going on slowly in the Nurse Corps department in Washington. The names found there are few in number, but among them are some of our best-known women, heading the list being the name of Miss Isabel McIsaac, who, after twenty years of the most arduous and confining work in the nursing profession, stands ready to leave her little home, so lately acquired, with its privacy and independence, to serve her country in time of calamity or epidemic at an hour's call.

We are inclined to think, however, that the ranks of the volunteer eligible list should be filled by the younger women, just as the ranks of the army are filled by young men. That young men make more enduring soldiers is a recognized fact all over the world, and that they also come more readily under the rigid discipline which is necessary in handling great numbers of people is also recognized.

This applies, we believe, with equal force to nurses in the army; there must be enough of the older women of experience to organize and control, but the great body of the Nurse Corps should be made up of the younger women who have not exhausted their endurance by long years of arduous work, and who have not been so long from under the discipline of hospital training that the necessary military restraint will come as a great hardship.

We cannot believe that it is lack of patriotism that makes American nurses so backward in making this volunteer list a credit to our profession. We know that if the need were to arise, thousands of nurses would be clamoring for an opportunity to serve.

We want to know why nurses are so slow about it, what there is that they do not understand, or why it is that, being good American citizens, possessing both the skill and the strength, they hesitate to place their names on the honor list, which is what this voluntary service will mean.

To submit to discipline, endure hardship, and risk one's life if need be is what the Government is asking of the great nursing body, and this

is simply what a nurse's life stands for, but so far only forty-three women have signified their willingness to stand ready to serve their country in time of calamity or war.

#### THE REGULAR SERVICE.

During our recent visit to San Francisco we spent an afternoon at the United States General Hospital at the Presidio, where all nurses entering the service are sent for their first detail, and where those going to and coming from service in the Philippines make their headquarters.

Our visit was unannounced, but we were given an opportunity by Miss Gottschalk, the nurse in charge, to meet every nurse at the station, and we were impressed with the dignity and intelligence of this group of women.

The hospital is very large. We do not remember the number of beds, but it consists of a great many pavilions built around a square with a most beautiful operating-pavilion recently finished and equipped. The hospital, as a whole, seemed to be most liberally supplied with every necessary appliance for the most efficient care of the sick. The patients were carefully classified and that order and discipline so characteristic of the army service in time of peace was very apparent.

Of the new operating-pavilion we can only say, from a hasty visit, that we have never seen an equipment in any civil or private hospital that compares with it.

The nurses detailed to this service perform practically the same duties as in civil hospitals, preparing all dressings, catgut, solutions, etc., and caring for the pavilion and adjoining rooms.

The nurses' quarters were comfortable, the dining-room somewhat crowded, but we have known that condition to prevail in many civil hospitals. From what we were able to learn in so hasty a visit, an examination of charts and questions as to methods, etc., the work of this hospital seems to be carried on upon the most scientific lines.

In fact, in just the proportion that the Government manages its hospitals badly in time of war, it would seem to be managing them exceptionally well in time of peace.

The point which we wish to emphasize in connection with our very short visit at the Presidio is this: that we can see no reason why well-trained, properly disciplined nurses should enter the army service and do so much grumbling as we have personally known many of them to do. We are inclined to think that it is more rebellion against the rigid military discipline, which must be maintained for the women in the army as well as for the men, rather than from any real cause of complaint so far as their personal comfort is concerned.

Much has been accomplished in a very few years in the way of improvement in the army service. Promotion with rank, which will give the nurse social status in the army, is what the service needs and what must be brought about. When that has been secured the army department will become, as it properly should, the most distinguished branch of nursing that a woman can enter. What we need at present is calm, deliberate, common-sense criticism from the nurses in the service, made in such a manner that the great nursing body can understand the needs and intelligently coöperate in securing such legislation as will give rank and such other improvements as the service should have to give greater dignity to the nursing department of the army as a whole.

Let us have a calm, reasonable discussion of the eligible volunteer list and the regular army service that nurses generally may have a better understanding of both departments.

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### SOME THINGS ABOUT THE SUMMER JOURNEY

WE returned to the JOURNAL desk on September 6 after two months of constant and very delightful travel across the country to Portland by the Northern Pacific route, with a side trip to Yellowstone Park, down the coast, stopping in California at San Francisco, Santa Barbara, Los Angeles, and Pasadena, then on the return trip a short stop at Tacoma, a few days in Seattle, North Yakima, and Spokane in Washington, another stop in Minneapolis and St. Paul, ending with a few days with Miss McIsaac at "Cranford." Although the trip was for pleasure, we visited a number of hospitals along the way and were entertained by nurses at most of the places where we stopped. We come back with our knowledge of hospitals and nursing standards greatly broadened, our patriotism increased,—if that were possible,—and our pride in the nursing profession wonderfully stimulated—if that also were possible.

The great expanse of unoccupied country between the Atlantic and Pacific impressed us quite as forcibly as it did when we made the trip more than a quarter of a century ago, but the progress that men have made in mastering the obstacles and in developing the resources of the West was a constant surprise and a never-failing interest. The development of the Northwest especially has been very graphically written up in the *World's Work* for August, with a series of illustrations that make an excellent souvenir of the summer's journey for those who have been over the ground.

The Yellowstone Park has been too frequently described to need more than passing mention—more than to say that one must see it to

appreciate its charm. It is the almost supernatural action of geysers, paint-pots, hot pools, and cold streams that make it so interesting seen under comfortable conditions of travel and with the added charm of staging through the beautiful mountain scenery of the Rockies.

One feature of the Park we think has not been sufficiently emphasized, however, and that is the lake, the highest body of water of its size in the country, in altitude a "mile and a half above Boston," as we were informed by the captain of the steamer that carries passengers across from the "Thumb" to the Lake Hotel. Perhaps because no scenery is ever perfect to us without water the view of this beautiful lake as we came over the crest of the last hill seemed the crowning beauty of the Park. Snow-capped mountains on the one side and forests of dark, silent pines on the other give a peculiar beauty to this sheet of water, and at no point are the mountains seen to such an advantage as from the little steamer when midway across the lake.

It is an interesting instance of the difficulties that have been overcome to make the Yellowstone trip attractive to know that the small steamer that has been on the lake for a number of years was brought across from Gardiner in sections, more than fifty miles, during the early days of the development of the Yellowstone, and that the new boat, which was launched on September 16, an invitation to which ceremony we received, was built on the shore of the lake, all material and machinery having to be carted on six-horse teams over the mountain roads of the Park. When one considers that this boat carries six hundred people, and in furnishing and equipment meets all the requirements of excursion boats of the highest class, it is hardly possible to realize the enterprise that has been necessary for its construction. It is the work of a private company, not the Government. No one should visit the Yellowstone without taking the little trip on the lake. It is not included in the regular ticket, but it is well worth the extra charge, and one evades a long stretch of dusty, level road by doing so. Nurses need diversion when they rest, and no better way of being entertained can be found than by taking this most interesting trip through the Yellowstone Park.

Even nurses can be interested in "irrigation," and during our trip we were able to study the system by which the sage-brush desert is made to produce apples that weigh a pound, fruits and vegetables of every kind, and three crops of alfalfa and hay in a season. So easy did it all seem to make things grow that we are tempted to recommend to nurses fruit-growing by irrigation as a refuge when professional interest and strength begin to fail. It is said to be very much easier than farming in

the East, although it would seem to require, owing to the use of many labor-saving devices, a higher order of intelligence.

It is marvellous to think that only water is needed to make the desert blossom as a rose and that each year the ingenuity of man is bringing water farther and farther from its source for this purpose.

#### THE HOSPITAL SYSTEM OF THE COAST.

In all of the cities visited we found hospitals, some magnificent in construction and equipment,—hotels really for the sick,—owned by companies of physicians who are the stockholders and directors as well as physicians in attendance, and who conduct training-schools and reap large profits from the investment—from ten to sixty-five per cent. we were told. Such hospitals are said to be a necessity, especially in California, where so many people in doubtful health flock to avoid the severe climate of other sections of the country. They are intended only for the class of people who are able to pay and who are accustomed to hotel prices and hotel “extras.”

But we found that the so-called general hospitals and church hospitals cared only for people who could pay or be paid for, endowed beds being very few even in the church hospitals, and we were told that the poor who applied for admission were sent to the county hospital—that there were no worthy poor on the Pacific Coast, that the man who had no money was either lazy or vicious, as work was so plenty in a new country that no man need be without means when overtaken by sickness. We also were impressed with the fact that few people seemed to know much about the county hospitals. We had the curiosity to visit the County Hospital in San Francisco—a place with a bad reputation in 1880 and that would seem to have progressed backward even with the introduction of a training-school. We do not intend to describe this hospital more than to say that it is under the control of the political machine, the members of which, it would seem to us, must be lacking in the common milk of human kindness—a man-governed institution for graft. Many good superintendents of nurses have attempted to reform this place, but as soon as suggestions requiring honest administration have been insisted upon a vacancy has occurred. There is an awakening among the citizens of San Francisco, however, that promises better conditions for the aged and sick who must seek refuge in this place.

The County Hospital in Los Angeles we did not visit, but we were told it was “not as bad as the one in San Francisco,” and in Portland the County Hospital was spoken of as a place way off somewhere that no one knew about.

How the prosperous city of Seattle provides for its pauper sick is

shown in Miss Major's little sketch in this issue. Miss Major has brought a woman's domestic instinct to bear upon a very crude and novel situation, and the result is a homelike, clean, and comfortable little hospital made out of an old boat. We inspected every nook and corner of it, and never have we seen a better illustration of the fact that *buildings* are not the most important requisite for the care of the sick. The right kind of a woman with power must always come first.

We were interested to visit the County Hospital of Seattle, and here we found an exceptionally comfortable institution—a good building, charmingly situated, with an atmosphere of cleanliness and sunshine everywhere, tents at one side for tubercular cases, and a vegetable garden with fruits and flowers in abundance. We were told that the excellent condition of this hospital was entirely due to the character of the man at the head and the matron, who were sincerely conscientious in the work they had undertaken, and that in spite of politics the place was well conducted. We were most courteously received and urged to inspect every part of the institution. There is no training-school here, but the nurses were attractive-looking women and, so far as one could judge from so superficial an inspection, were taking excellent care of the patients. Everything was sweet and clean, quite in contrast to the County Hospital at San Francisco.

Seattle has just built a magnificent club-house, and the decorations of the "*bar*" in the new Alaska building—a big business block—are the pride of the city. The spirit of charity as we associate it with the care of the sick is seemingly lacking among the people on the Pacific Coast. The pioneer days are passing, however, and the charitable spirit will naturally follow the commercial age which every new settlement seems to have to pass through.

We believe the awakening is to come largely through the nurses, but we must wait for space in another issue in order to discuss the training-schools and nurses of the Pacific Coast.

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## STATE MATTERS

WE call the attention of our readers to several important State announcements in the Official Department. New York and Ohio hold regular meetings in October. The Maryland Board of Nurse Examiners make an appeal to nurses to be more active in the matter of registration. Work in the New York office has been delayed during the summer by the absence of the president and secretary of the Board of Examiners, but is now resumed and will be carried on regularly. The terms of the



waiver expire in April, 1906, after which date no certificates will be issued without an examination.

#### MEETING OF THE NEW YORK STATE NURSES' ASSOCIATION.

The regular meeting of the New York State Nurses' Association will be held at Niagara Falls on Tuesday, October 17, at ten A.M. and two P.M. Delegates will register at nine A.M. The Mayor of Niagara Falls will deliver the address of welcome and several very interesting speakers are expected.

On Wednesday, the 18th, an open meeting will be held for the purpose of discussing the Registration Act. Representatives of hospitals and nurses who are not members of the association are cordially invited. The meetings will be held in the auditorium of the Natural Food Conservatory.

The local committee recommends the following hotels: Temperance House Annex, two dollars per day; Hotel Imperial, two dollars and fifty cents per day; Hotel Powers, two dollars per day.

Some interesting trips are being arranged for, especially the one by the Gorge Route, following the Niagara River to Lewiston and back on the Canadian side through Queenston and Victoria Park.

There should be a very large attendance at this meeting, as it is within easy distance of so many nursing centres in the western part of the State, and Niagara offers rare attractions to nurses at a greater distance. It is hoped that excursion rates can be arranged for, and nurses should inquire if this has been accomplished before buying their tickets. In parties of not less than ten we think this can often be done from local points.

We are anxious to have the names and full addresses of the presidents and corresponding secretaries of all the twenty-one State associations to publish in the November JOURNAL, and to be kept in each number during the year. We shall do this in response to a number of requests, and the list to be valuable must be accurate and complete. We ask all such officers to send their addresses at once.

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#### CHANGES IN THE JOURNAL STAFF

WE regret exceedingly to announce to our readers the resignation of Miss Elizabeth R. Scovil as editor of the department of "Notes from the Medical Press." Miss Scovil is leaving her old home in New Brunswick to accompany her brother and his motherless family to a new home in the Far West, and she feels that the regular work and time which the

department requires will be more than she can continue to give under the changed conditions of her life.

The editor of *Medical Notes* has not only to put her material into form for the press, but must examine a dozen or more medical journals each month and cull out such ideas or items as will be of special value and interest to nurses.

Miss Scovil's gratuitous work has been splendidly done, her copy always on time, and the *JOURNAL* makes full and grateful acknowledgment for the liberal service of such a high order of excellence that she has given to it for so long a time.

We extend to Miss Scovil for the *JOURNAL* and its hosts of readers earnest wishes for great happiness in her new environment.

Miss Scovil will make up the department for the November number, and in that number we hope to announce her successor.

#### THE COLLABORATORS.

The staff of collaborators remains the same as last year with the exception of two new members added to the list, Miss Mary S. Loomis, of Seattle, and Miss A. Laura Goodman, of Spokane, who will represent the *JOURNAL* in the State of Washington.

Miss Loomis has lived for many years on the Pacific Coast. She is a graduate of the Illinois Training-School and returned to the coast to practise her profession. She is in charge of the operating-rooms at the Seattle General Hospital and is president of the Nurses' Association of that city.

Miss Goodman is a graduate of the Harper Hospital, Detroit. She has been in Spokane only two years, but is an active worker for State registration and the corresponding secretary of the Nurses' Association.

We take this time to remind our collaborators that the *JOURNAL* looks to them for information on all nursing matters from their districts, and expects them to induce nurses especially to contribute to its literary pages. The office is not in any sense complimentary. It carries with it an obligation for the advancement of the profession. The collaborators are the *JOURNAL*'s special agents to stimulate nurses to literary effort, a department of progress in which it is often said nurses are very lacking. Such development is essential for professional growth, and this *JOURNAL* is the product thus far of the literary efforts and literary standards that nurses have attained, but it has been too much the work of a few rather than representative of the profession as a whole. One of the very important educational motives for the *JOURNAL*'s existence was to stimulate nurses to literary effort, and in promoting such effort the collaborators have been and must continue to be great factors. We

urge upon them, therefore, greater activity along these lines for the coming year, acknowledging with pleasure our indebtedness for work done in the past.

The JOURNAL begins the new year with brightest prospects. The awakened interest of the alumnae associations promises to soon relieve the individual stockholders of all financial responsibility and to make the JOURNAL in fact the property as well as the official organ of the Associated Alumnae.

It only needs to have the individual alumnae associations increase their membership dues to include the subscription to the JOURNAL to make it possible to broaden its educational value, improve the quality of the magazine, and at the same time make it cheaper, pay all contributors and officers for their material and work, and make it the most splendid professional journal the world has ever seen.

We offer this suggestion to the alumnae associations to be taken up for early consideration with the work of the year just now beginning.

#### CIVIC RESPONSIBILITY.

We also urge greater activity in the organization along the lines of civic work, and we want to see every alumnae association represented on the Board of Managers of its hospital and training-school. We realized in listening to the papers and discussion at the Portland Congress that there is hardly a question bearing on public morals or public health where the experience and judgment of nurses is not needed. We hope the day is not far distant when nurses will be recognized as being something more than paid agents of philanthropic associations, but they must show their interest and demonstrate their ability before such recognition will be voluntary on the part of the public.

The time is coming when nurses will take care of all sick people as the natural responsibility of the profession. It is what all nursing education is leading towards, and in the long future the people whom nurses serve will not be only those who can pay twenty-five dollars per week. Competition and an overstocked market will make it necessary for nurses to take the fee of the man who can pay fifteen, ten, or even five dollars. When she is recognized as belonging to a profession she will be able to charge more than twenty-five dollars—perhaps one hundred—to the man who can pay it, and in this way strike an average which will make nursing much more profitable than it is to-day; the great middle class will be properly nursed, the untrained woman will not be needed because she is cheap, the public will be better served, the nurse better paid, and the doctor better pleased. In the meantime, push forward State registration and all organization work. The strength of the movement is in the local associations.

## YELLOW FEVER

BY RUDOLPH MATAS, M.D.

New Orleans, La.

## INTRODUCTORY NOTE.

AT a meeting of the Orleans Parish Medical Society, held August 12, 1905, Dr. Rudolph Matas addressed the society on the "*New duties and responsibilities imposed upon trained nurses, and other persons entrusted with the care of yellow-fever patients, in consequence of the newly acquired knowledge of the mode of transmission of this disease by the mosquito.*" He believed it the duty of all physicians, and especially those interested in the education of trained nurses, to properly instruct them in the elementary facts upon which the present methods of yellow-fever sanitation and personal prophylaxis are based. The rôle of the mosquito in the transmission and causation of yellow fever had been made quite apparent to the general public by the numerous speakers who had engaged in an educational mission in the present campaign. But the great responsibility which now rested upon the trained nurses in applying this recently acquired knowledge as a matter of professional obligation at the bedside had not been fully appreciated by either the physicians or the nurses. The physician himself could only give directions and instructions; the detailed and efficient execution of his orders rested wholly upon the trained nurse or the person who took her place at the bedside. It was unfortunate that the number of trained nurses that were available in the present epidemic was so entirely inadequate to meet the needs of the population, and still more unfortunate that so few had been trained intelligently and efficiently in the hygienic or sanitary management of the disease. On the other hand, the essential knowledge required to do efficient sanitary work at the bedside was easily obtained and easily applied, provided the nurse or responsible attendant at the bedside was duly impressed with the necessity of destroying mosquitoes in the sickroom as a serious personal responsibility. As a teacher in a training-school for nurses, he was impressed with the value of elementary laboratory demonstrations which elucidated the more impressive and important facts in the biological history of the mosquito as an adjunct to didactic teaching in the prophylaxis of yellow-fever, and he hoped that others interested in the training of nurses in the hospitals and schools of the South would add this mode of instruction to the regular curriculum, not only on account of yellow fever, but also of malarial and other tropical diseases in which the mosquito entered as a large etiologic factor. He had prepared a brief synopsis of the elementary facts connected with yellow-fever prophylaxis and a statement of the nurses's sanitary duties in this disease, which he had utilized in his teaching and now submitted to the society for approval.

It was moved by Dr. L. F. Saloman and seconded by Dr. G. Keitz that a pamphlet, incorporating the suggestions and recommendations of Dr. Matas, be printed by the society and be distributed among the physicians and nurses of New Orleans. This motion was carried unanimously.

## I.

## ELEMENTARY FACTS OF EDUCATIONAL VALUE.

1. Yellow fever may be defined as an acute, infectious, febrile disease which is transmitted from the sick to susceptible individuals through the agency of mosquitoes, and, as far as known, by the single species, the *Stegomyia Fasciata*,\* which is the common domestic or cistern mosquito of New Orleans, and, in fact, of all the localities in which yellow fever prevails.

2. The germ or transmissible poison of yellow fever exists in the blood of yellow-fever patients only during the first three days of the disease; afterwards the patient ceases to be a menace to the health of others. Hence the importance of recording the very hour when the attack first began.

3. The mosquito (*Stegomyia Fasciata*) is powerless to convey the disease to a susceptible person by its bite until at least twelve days have elapsed after biting the yellow-fever patient. This period of incubation in the mosquito is the time that is required for the germ of the disease to breed in the body of the mosquito and to migrate from the insect's stomach to its salivary glands. The United States Army Yellow-Fever Commission found, in 1900, that in Cuba this period varies from twelve days, in the hot summer months, to eighteen days and over, in the cooler winter season.

4. After incubating the yellow-fever germ in its body during the period above specified, the *Stegomyia* is ready to transmit the disease during the entire period of its natural life, which may extend over one hundred and fifty-four days, provided the insect has access to water. (Guiteras.) Walter Reed was able to inoculate yellow fever with a *Stegomyia* fifty-seven days old, Guiteras with another one hundred and one days old. [NOTE.—According to Agramonte, *Stegomyia Fasciata* in Havana can only be coaxed to bite until four days old. With us in Louisiana, says Dupree, it bites without coaxing within twenty-four hours after emerging from the pupa case. It was believed at one time that: (1) the females of *Stegomyia* must be impregnated before they will bite; (2) that the female after biting once does not appear to bite a second time, or at least until five or seven days have elapsed; but

\* *Stegomyia* (pronounced *steg-o-mi'-e-ah*), from the Greek, *Steganós*, covered, and *múta*, a fly. (Gould.) The *Stegomyia Fasciata* (striped) is also known as the "brindle" or "tiger" mosquito, on account of the striped appearance of its limbs, which readily distinguish it from the common gutter mosquito (*Culex Pungens*) and the swamp or malaria mosquito (*Anopheles*). *Stegomyia Fasciata* is found wherever yellow fever prevails. It is essentially a domestic mosquito, found usually in the neighborhood of human habitations and preferably in clean, sweet water.

Dupree says that the *Stegomyias* in Louisiana that have been isolated and reared apart from the males will bite promptly and frequently. Probably after they have digested their blood meal, and, like *Anopheles*, within three to five days after.]

5. A period varying from two to five days usually elapses after the bite of an infected mosquito before the symptoms of yellow fever will develop in the human subject. (This is the incubation period of yellow fever, and the United States Army Yellow-Fever Commission found that in thirteen cases of experimental yellow fever obtained by the bites of mosquitoes it varied from forty-one hours to five days and seventeen hours, after mosquito inoculation.)

6. From the above we gather that if an adult *Stegomyia Fasciata* bites a yellow-fever patient within the first three days of the disease it will have to incubate the poison in its body from twelve to eighteen days (incubation period in the mosquito); then, if it bites a susceptible person at the expiration of this time, two to five days must elapse for the disease to manifest itself in the bitten person. Therefore, in estimating the probable spread of yellow fever, from a single individual to the susceptible persons in his environment, a period of at least twenty-six days must be allowed to elapse before the success or failure of any preventive measures directed towards the destruction of the mosquito can be determined. In view of the fact that several days may elapse before a mosquito infected from the first case may bite a susceptible person, this period of observation should be lengthened to thirty days, which is the time given by the health authorities of New Orleans in the present epidemic to determine if a focus will develop from an infected case after its first appearance in a given locality.

7. The *Stegomyia Fasciata* cannot convey yellow fever during the time that the poison is incubating in its body (twelve to eighteen days). It may bite freely and repeatedly during this period, but its bite is innocuous; neither does its bite within this period confer any immunity to the bitten person.

8. Yellow fever is not transmitted or conveyed by fomites (*i.e.*, articles or inanimate objects that have come in contact with yellow-fever patients or their immediate surroundings). Hence the disinfection of clothing, bedding, or merchandise supposedly soiled or contaminated by contact or proximity with the sick is unnecessary.

9. The bodies, or cadavera, of the dead from yellow fever are incapable of transmitting the disease unless death occurs within the first three days of the disease (a rare occurrence), and then only if mosquitoes are allowed to bite the body before decomposition has set in.

10. There is no possibility of contracting yellow fever from the black

vomit, evacuations, or other excretions or secretions of yellow-fever patients.

11. An attack of yellow fever caused, as it always is, by the bite of the *Stegomyia* confers immunity against subsequent attacks of the disease.

## II.

### NEW DUTIES AND RESPONSIBILITIES IMPOSED UPON TRAINED NURSES IN THE TREATMENT OF YELLOW FEVER IN CONSEQUENCE OF THE ABOVE FACTS.

1. No nurse can be considered as trained in the management of yellow fever in the light of present accepted knowledge unless she realizes fully, earnestly, and conscientiously that the disease is transmitted solely by mosquitoes, and that it is her duty to prevent the admission of these insects to the sickroom and to destroy them promptly if they should find their way therein.

2. That as the inseparable attendant at the bedside of the patient she must coöperate with the physician in the discharge of his functions as guardian of the public health, the trained nurse in this capacity becoming directly the most efficient and important sanitary agent in preventing the spread of yellow fever in infected localities. Upon her intelligent appreciation of the mode of transmission of this disease her personal safety (if she is a non-immune) and the protection of the family and the entire household of the patient (especially if these are not immunes) largely, if not entirely, depends.

3. Every nurse must bear in mind that the most malignant yellow-fever patient is innocuous and absolutely harmless to even the most susceptible non-immune if the proper precautions are taken to prevent the access of mosquitoes to the patient's person.

4. The greatest freedom of personal contact and intercourse may therefore be permitted between the yellow-fever sick and the well in the sickroom, provided the inoculation of mosquitoes by biting the patient during the first three days of the disease is absolutely prevented.

5. The mission of a trained nurse is not satisfactorily accomplished if a patient suffering from any kind of fever, in localities infected with yellow fever, who is confided to her care is allowed to be bitten by a mosquito, even if the fever is proven not to be yellow fever. Mosquito bites are annoying and harmful even if not infective to the patient, and it must be looked upon as an evidence of neglect if he shows evidences of mosquito stings.

6. No nurse can consider herself a trained yellow-fever nurse unless she has made herself thoroughly familiar with the weapons which science and experience have given her to effectively protect her non-infected

patients and those persons who are dependent upon her knowledge and exertions for safety from the infected.

7. The weapons of offence and defence that the nurse must learn to handle in protecting her patients are:

(A) *The Mosquito-Bar (bobbinet preferred), to isolate the patient in his bed.*

1. The netting of bars must have meshes fine enough to prevent the passage of mosquitoes.

2. Mosquitoes can bite through mosquito-nets when any part of the patient's body is in contact with the netting.

3. Frequent examinations should be made to see that there are no torn places in the netting and that no mosquitoes have found a lodging inside.

4. The netting should be well tucked in to keep the mosquitoes from entering.

5. If mosquitoes are found within the netting they should be killed inside, not merely driven or shaken out.

6. All cases of fever should be promptly reported to the physician; awaiting his arrival they should be covered with a mosquito-bar. This is particularly important in dealing with mild fevers, especially in infants and children in localities liable to infection with yellow fever. The disease manifests itself in such a mild form in infantile and early childhood that it is likely to escape recognition. On account of the very mildness of the symptoms the usual precautions are not taken and the mosquitoes are able to spread the disease without molestation. The mild or unrecognized cases are for this reason the most dangerous from a sanitary point of view.

(B) *Screens.*

All openings leading to the sickchamber should be screened. Outside of hospitals wire screens are not usually available, and provisional screens can be made of bobbinet or cheese-cloth, which can be tacked or otherwise secured to the openings of the sickroom.

(C) *Sulphur and Pyrethrum for fumigation.*

Fumigate the room with sulphur or pyrethrum (insect powder) to destroy possibly infected mosquitoes as early as possible after the fourth day of fever. Sulphur burned in an iron pot is the surest way, and if used in proper quantity will not injure fabrics or colors. Three pounds in an average room is sufficient if the room be closed; more accurately, two pounds of sulphur to one thousand cubic feet of space is estimated by sanitary authorities; and one pound of insect powder to one thousand



cubic feet will suffice to stupefy the mosquitoes. The mosquitoes will fall to the floor and should be collected and burnt. Two hours' fumigation with sulphur is quite sufficient in ordinary cases. The fumes of sulphur will not remain long, and household ammonia sprinkled about the room will diminish their unpleasantness.

The fumigation should be done in the morning, so that the room will be free of odor by night, and it should be done preferably in dry weather. Whenever the condition of the patient will permit, a room adjoining the one occupied by the patient should be first purified of mosquitoes and prepared for the reception of the patient, who is to be carefully transferred to the disinfected room as early as possible after the fourth day.

The work of disinfection and mosquito destruction, as well as screening, is now conducted by the health authorities immediately after notification by the attending physician. But in isolated localities, or when delay in obtaining sanitary relief is unavoidable, the physician and the nurse must direct the members of the household in applying the prescribed regulations.

Additional precautions in sulphur fumigation, recommended by the Health Authorities in charge of sanitation in New Orleans during the present epidemic:

"Remove all ornaments of metal, such as brass, copper, silver, and gilt, from the room that is to be fumigated. All objects of a metallic nature, which cannot be removed, can be protected by covering the objects tightly with paper, or with a thin coating of vaseline applied with a brush.

"Remove from the room to be fumigated all fabric material after thoroughly shaking. Open all drawers and doors of furniture and closets.

"The room should be closed and made as tight as possible by stopping all openings in chimney, floor, walls, keyholes, and cracks near windows and doors.

"Crevices can be closed by pasting strips of paper (old newspapers) over them with a paste made of flour.

"The sulphur should be placed in an iron pot, flat skillet preferred, and this placed on bricks in a tub or other convenient water receptacle with about an inch of water in the bottom. This is a precaution which must be taken to guard against accidents, as the sulphur is liable to boil over and set fire to the house.

"The sulphur is readily ignited by sprinkling alcohol over it and lighting it.

"The apartment should be kept closed for two hours, and then opened up and well ventilated.

"NOTE.—To find the cubic contents of the room, multiply the length of the room by the width, and this total by the height, and to find the amount of sulphur necessary to fumigate the room divide the cubic contents by 500, and the result will be the amount of sulphur required in pounds.

"Take, for example, a room fifteen feet long, ten feet wide, and ten feet high, we would multiply  $15 \times 10 \times 10$ , equals 1500 cubic feet. Divide this by 500, and you will have the amount of sulphur required, viz.: three pounds."

(D) *Kerosene Oil to destroy the larvæ of the mosquitoes in cisterns, gutters, pools, and other water surfaces where the eggs of the mosquitoes are deposited and develop into wrigglers.*

The following facts bearing on mosquito destruction recommended by the Board of Public Health and Marine Hospital Service in the circular of July 31, 1905, are of special value in suggesting the proper use of coal oil as a mosquito destroyer in infested localities.

#### FACTS BEARING ON MOSQUITO DESTRUCTION.

"1. Mosquitoes live in the vicinity in which they breed. They do not often fly a long distance.

"2. Mosquitoes breed only in water—usually in artificial collections of fresh water.

"3. The young mosquito, or wriggler, lives in water at least seven to twelve days.

"4. Although the wrigglers live in water, they must come frequently to the surface to breathe.

"5. Coal-oil on the surface of the water prevents the wrigglers from breeding.

"6. Destroy the breeding places and you will destroy the mosquitoes.

"7. Empty the water from all tubs, buckets, cans, flowerpots, vases, etc., once every forty-eight hours.

"8. Fill or drain all pools, ditches, unfilled postholes, and the like.

"9. Change regularly every day all water needed in chicken-coops, kennels, etc.

"10. Treat with oil all standing water which cannot be screened or drained (one ounce of oil will cover fifteen square feet of surface). The oil does not affect the water for use if the water is drawn from below.

"11. Where oil is applied to standing water it must be distributed evenly over the surface.

"12. Put fine wire netting (eighteen meshes to the square inch) over cisterns, wells, and tanks of water in everyday use.

"13. Places in which it is undesirable to put oil, such as watering-troughs for stock, lily ponds, and so forth, can be kept free from wrigglers by putting in gold-fish or minnows.

"14. Clean away all weeds, grass, and bushes about ditches, ponds, and other possible breeding-places, since these afford a hiding-place for the mosquitoes.

"15. Clean up vacant lots and back yards of all cans, tins, bottles, and rubbish in which water may collect and stagnate.

"16. First do away with, or treat, all places where mosquitoes *are known* to breed, and then begin to work on places where they *might* breed.

"17. Inspect and treat with coal oil gutters, culverts, ditches, man-holes, catch basins, etc., along the roadside. Manhole covers should be screened."

(E) *The Aromatic Essential Oils and other substances which are repulsive to mosquitoes:*

Such as citronelle, lavender, pennyroyal, menthol, camphor, eucalyptus, and thymol, may be used, pure or mixed with alcohol or glymol, to protect the exposed surfaces of the skin of the attendants in the sick-room to aid in keeping off mosquitoes.

(F) *The Hand Palmetto Fan, and the Electric Fan whenever this is available.*

The electric fan is not only most valuable as a means of cooling the hot summer atmosphere of the usual sickroom in yellow-fever districts, but is also a very effective destroyer of mosquitoes. In all cities where electric plants exist the electric fan is not to be regarded as a luxury, but as a necessity.

[See communication by Surgeon W. F. Arnold, United States Navy, on "The Mosquito and the Electric Fan," in *American Medicine*, August 12, 1905.]

8. Whenever it is impracticable for a nurse to screen the sickroom so as to make it mosquito proof, she should at least make every effort to protect the person of the patient during the prescribed three days of greatest danger from infection by constantly keeping him under a bar and destroying all the mosquitoes that may chance to penetrate within it.

#### TO THE PHYSICIAN.

It is the duty of every physician worthy of the name to encourage the nurse in the exercise of her sanitary duties, and to aid with all his influence and authority in preparing the environment of the patient,

personal and otherwise, for the proper and efficient discharge of the responsible duties that the new conditions have imposed upon the trained nurse in the treatment of yellow fever. No nurse, no matter how intelligent or conscientious, can possibly do her duty in protecting her patient from mosquitoes and preserve his surroundings from infection without the earnest coöperation of the attending physician and the whole-hearted assistance of the people in the infected household.

The following books and articles intended for the general reader are recommended for perusal by nurses and others seeking the most recent information on mosquitoes and yellow fever:

1. "Mosquitoes: How they Live; How they Carry Disease; How they are Classified; How they May be Destroyed." By L. O. Howard. Third edition. McClure, Phillips & Co., New York, 1902.

2. "The Problem of Mosquito Destruction in New Orleans." By Dr. Quitman Kohnke, Health Officer. (Illustrated.)

3. "Biennial Report of the Board of Health of the City of New Orleans, 1902-03." Report of a visit to Havana (describing the methods of yellow-fever sanitation based upon mosquito destruction). By the same author.

4. "Wood's Reference Handbook of the Medical Sciences." Edited by Albert H. Buck, Vol. V., second edition, 1904. "Mosquitoes in Relation to Human Pathology." By H. B. Ward.

5. "The Encyclopædia Americana," Vol. XVI., article, "Yellow Fever." By George M. Sternberg, Washington, D. C.

6. "The Mosquitoes of Louisiana and Their Pathogenic Possibilities, with Remarks upon Their Extermination." By Dr. W. H. Dupree, Baton Rouge, La. *New Orleans Medical and Surgical Journal*, Vol. LVIII., No. 1. (July, 1905.)

7. "Yellow Fever. Clinical Notes." By Just Touatre, M.D. (Paris). Translated from the French by Charles Chassaing, M.D. Published by *New Orleans Medical and Surgical Journal*, Limited, 1898. (Specially recommended for the section on treatment.)

More complete technical articles will be found in "Wood's Reference Handbook," second edition, Vol. VIII., 1904, as follows:

"Yellow Fever; Historical Sketch of the Disease, Its Etiology and Mode of Propagation." By Dr. Charles J. Finlay (Havana).

"Yellow Fever; History and Geographic Distribution." By George M. Sternberg (Washington, D. C.).

"Yellow Fever; Symptomatology, Morbid Anatomy, Treatment." By Dr. John Guiteras (Havana).